

REMARKS

Claims 1-2 and 4-10 are pending in this application. By this Amendment, claims 1 and 2 are amended, and claim 3 is canceled. Support for the amendments can be found in original claim 3 and in the specification at, for example, paragraph [0029]. No new matter is added. Reconsideration of the application based upon the above amendments and the following remarks is respectfully requested.

I. Rejection under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claim 2 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. By this Amendment, claim 2 is amended in light of the Examiner's comments. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. Obviousness-Type Double Patenting Rejection

The Office Action provisionally rejects claims 1, 3, 6 and 8 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 6, 10 and 12 of co-pending U.S. Patent Application No. 10/540,389. Without admitting to the propriety of the rejection, and in the interest of advancing prosecution, Applicants are simultaneously filing herewith a Terminal Disclaimer over the cited reference, thus obviating the rejection. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

III. Rejection Under 35 U.S.C. §102

The Office Action rejects claims 1-2 and 6 under 35 U.S.C. §102(b) as being anticipated by Sono et al. ("Sono", GB 1 496 345). Applicants respectfully traverse this rejection. Without admitting the propriety of the rejection and in the interest of advancing

prosecution the subject matter of non-rejected claim 3 is incorporated into independent claims 1-2. Thus, the rejection is overcome.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

IV. Rejections Under 35 U.S.C. §103

Claims 1-6 and 8-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takei et al. ("Takei", WO 02/05035, wherein the citations are taken from U.S. Pub. 2003/0146416). Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Takei in view of Rutter ("Rutter", U.S. Pub. 2002/0110665). Because the rejections are related, they are addressed together. Applicants respectfully traverse the rejections.

Independent claim 1 specifies, *inter alia*, a gap fill material forming composition comprising a polymer having a weight average molecular weight of 5,000 to 20,000 that is composed of only structural unit of formula (1), a crosslinking agent, and a solvent. Independent claim 2 specifies, *inter alia*, a gap fill material forming composition comprising a polymer having a weight average molecular weight of 5,000 to 20,000 that is composed of structural unit of formula (1) and structural unit of formula (2) where the polymer contains the structural unit of formula (1) in a ratio of 0.40 to 0.95; a crosslinking agent; and a solvent. Each of independent claims 1 and 2 further specify, *inter alia*, that the polymer contains components having a molecular weight of 3000 or less in a rate of 20% or less.

At most, Takei teaches a gap filling material having a polymer that may preferably be a polymer that contains at least 1 or more hydroxyl groups (Takei, paragraph [0061]). Takei further teaches that the preferred polymers include acrylic acids, hydroxyalkyl acrylates, hydroxyalkyl methacrylates, styrenes, celluloses, crotonic acids, and phenol resins (Takei, paragraphs [0063]-[0069]). Takei further includes hydroxyethyl acrylate and hydroxypropyl acrylate as two of 53 possible polymer compounds (Takei, paragraphs [0063]-[0069]). In

Takei, the disclosed number of possible polymer compounds is too numerous to support a case of obviousness of the narrowly claimed invention. Takei's disclosure provides an extremely large number of possible distinct combinations, thus it would not have been obvious for a person skilled in the art to select Applicants' specifically claimed polymer structures from Takei's broad disclosure. Thus, Takei would not have rendered obvious independent claims 1 and 2.

Regarding claim 1, Takei teaches a gap-filling material containing p-vinylphenol, also known as polyhydroxystyrene (Takei, Examples 1 and 2). Comparative Example 3 also teaches using the polyhydroxypropyl methacrylate obtained in Synthetic Example 4 (Takei, paragraph [0147]). However, the polyhydroxypropyl methacrylate obtained in Synthetic Example 4 has a weight average molecular weight of 130,000 (Takei, paragraph [0127], far in excess of the presently claimed range). In addition, the polymer of Takei's Comparative Example 3 exhibits an Iso portion flattening rate of 82% and a Dense portion flattening rate of 51% (Takei, Table 1).

Takei thus fails to teach or suggest a polymer having a weight average molecular weight of 5,000 to 20,000 that is composed of only the structural units of formula (1), as claimed in claim 1. In addition, nowhere does Takei teach or suggest that the polymer contains components having a molecular weight of 3000 or less in a rate of 20% or less, as claimed. Accordingly, the broad disclosure of Takei would not have rendered obvious independent claim 1.

Regarding claim 2, Takei teaches a resin where polyhydroxystyrene is co-polymerized with hydroxyalkylmethacrylate (Takei, claim 15). However, nowhere does Takei teach or suggest using a polymer composed of the specific combination of the structural unit of formula (1) and the structural unit of formula (2), as claimed. Takei also fails to teach or suggest a polymer that contains the structural unit of formula (1) in a ratio of 0.40 to 0.95, as

claimed. In addition, as discussed above, a polymer having a weight average molecular weight in the range of 5,000 to 20,000 is an important feature of the present claims because the claimed polymer composition provides a significantly improved flattening rate. Thus, the present invention requires the limitations of the specific structural units, in the specifically disclosed ratio, in combination with the specifically selected range of the weight average molecular weight of the polymer.

Takei thus does not teach or suggest the specific combination of a polymer having a weight average molecular weight of 5,000 to 20,000 that is composed of the structural unit of formula (1) and the structural unit of formula (2) where the polymer contains the structural unit of formula (1) in a ratio of 0.40 to 0.95, as claimed. Accordingly, the broad disclosure of Takei would not have rendered obvious independent claim 2.

Rutter, cited only against dependent claim 7, does not teach or suggest the gap fill material forming composition of independent claim 1. Therefore, Rutter does not overcome the deficiencies of Takei, as discussed above.

Claims 4-10 variously depend from independent claim 1. Because Takei and Rutter fail to teach or suggest, alone or in combination, the features recited in independent claim 1, dependent claims 4-10 are patentable for at least the reasons that claim 1 is patentable, as well as for the additional features they recite.

Accordingly, any combination of the cited references fails to teach or suggest the gap fill material forming compositions, as claimed. The references thus would not have rendered obvious the claimed invention.

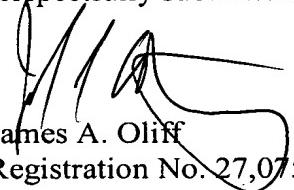
Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

V. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of this application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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Attachment:

Petition for Extension of Time
Terminal Disclaimer

Date: August 18, 2008

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